



Pest Facts

Mites

Although closely related to ticks, mites are often considered secondary pests. However, certain mites are important medical, stored product and nuisance pests. The following information provides a brief description of some of the more important mite pests and recommendations for management.

Chigger Mites

A. General and Medical Importance

Larvae of mites in the family Trombiculidae, sometimes called “chiggers”, “harvest mites”, or “red bugs”, are medically important pests around the world. Over 700 species of chigger mites occur in the world, but only about 20 species cause dermatitis or vector diseases such as scrub typhus. Larval chiggers crawl up on blades of grass or leaves and subsequently get on passing vertebrate hosts. On humans, they generally crawl to and attach where clothing fits tightly or where flesh is tender, such as the ankles, groin or waistline. Chiggers do not usually burrow beneath the skin but insert their mouthparts at a pore or base of hair follicle and feed for a few days. Not all medically important chiggers produce the familiar itch reaction; those serving as vectors of scrub typhus are not associated with itching or skin reactions.

B. General Description

Adult chigger mites are oval shaped (about 1 mm long) with a bright red velvety appearance. Only larval stage chiggers attack vertebrate hosts; the adults do not bite. Chigger larvae are very small (0.2 mm long), round mites with numerous setae. The mites may be red, yellow, or orange in color.

C. Biology and Behavior

Chigger mites are found in moist microenvironments within grassy, weedy, or wooded areas, especially forest edges and wild blackberry patches. Adult chiggers are predaceous. The female lays eggs singly on soil or litter, the eggs hatch in about one week. After hatching, the life cycle includes six stages. The entire life cycle from egg to adult may be completed in about 60 days. The parasitic larvae normally feed on rodents, birds and given the chance, people. Larval chigger mites inject saliva that dissolves host cellular tissue. The mites then ingest this mixture of lymph, tissue and blood cells. They do not actually “suck blood” as other parasites do.



D. Management

Avoid areas where mites may be present. Wear insect repellent containing 32% DEET. Additionally, wear long sleeves and pants. After exposure to infested outdoors areas, hot soapy baths or showers will help remove any chiggers. Antiseptic, hydrocortisone ointment are often used as a treatment and reduce the risk of secondary infection.

House Dust Mite

A. General and Medical Importance

Mites in the family Dermatophagoides are commonly found in houses worldwide and have been associated with house dust allergy. Research has revealed that house dust mites possess powerful allergens in the mites themselves as well as in their secretions and excretia. Although the mites are harmless, a considerable amount of allergic rhinitis, asthma, and childhood eczema is attributable to their presence.

B. General Description

Adult house mites are white to light tan and about 0.5 mm long. Their cuticle has numerous fine striations. The mites have plump bodies (not flattened), well developed chelicerae (mouth parts) and suckers at the end of their tarsi.



C. Biology and Behavior

House dust mites are associated with furniture (especially mattresses, sofas, and recliner chairs) and debris in household carpets. They are generally more numerous in mattresses and bedrooms than in other areas of a house. The food source for dust mites is believed to be shed human skin scales. The mites are more abundant in warm buildings with high humidity. The life cycle is completed in about one month and adults may live 2 months.

D. Management

House dust mite infestations are managed by efforts to minimize the level of dust mites. Since long fibered carpets are difficult to clean, tile, wood or other hard floor covering may be used. Vacuuming should be done regularly, especially in the bedroom. The mattresses should be vacuumed intensely. Plastic mattress covers should be used and replaced annually. Sheets and blankets should be cleaned on a regular basis. Efforts should be made to reduce household humidity levels as well.

Scabies Mite (Human Itch or Mange Mite)

A. General and Medical Importance

Scabies, caused by *Sarcoptes scabiei*, is probably the most important disease caused by mites. It occurs worldwide, affecting all races and socioeconomic classes in all climates. The tiny mites burrow under the skin, leaving small open sores and linear burrows that contain the mite and their eggs. When a person is infested with scabies mite for the first time, there are few symptoms for about a month, until sensitization occurs. When that happens, there is severe itching, especially at night and frequently over much of the body. Large patches of erythema or rash may occur on the body. Burrows are usually located on the hands, wrists, elbows, and especially the webbing of the fingers and folds of the wrists.

B. General Description

Scabies mites are small (0.2 to 0.4 mm long), oval, saclike, and eyeless. Their legs are rudimentary; the anterior two pairs have bellshaped suckers on the end. The body is covered with striations and has several stout blunt spines and a few long setae. Scabies



mite mouthparts are composed of toothed chelicerae and one-segmented palps

C. Biology and Behavior

Scabies is transmitted by close, human to human contact with infested individuals. Touching or shaking the hands of infested individuals is a major mode of transmission. A female mite infests a new host by burrowing beneath the outer layer of skin and laying her eggs in the tunnels that she excavates. The six-legged larval stage emerges from each egg and molts to the first nymphal stage in 2-3 days. Nymphal and adult stages have eight legs. After a few days the nymphs molt to the next nymphal stage. After the second nymphal stage, adults are formed. The entire life cycle takes about 10-17 days. The mites apparently ~~eat~~ human skin, although the immatures may feed on hair follicle secretions.

D. Treatment of Infestation

First, scabies should be confirmed by isolating the mites in a skin scraping. Scrapings should be made at the burrows, especially on the hands between the fingers and the folds of the wrists. Once scabies is confirmed, treatment can be initiated. Since the mites cannot live off of a human for more than 24 hours, insecticide treatments of bedding and clothes is unnecessary. It is recommended that all material is washed in hot water. Consult a physician for treatment of the patient directly.

This publication contains general recommendations that are subject to change and update. For additional pest management information, please contact the Entomology Department at the Defense Supply Center Philadelphia-West Coast Support Office, Alameda, California. DSN 686-8122, commercial (510) 337-8122 or email paa5245@exmail.dscp.dla.mil

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